

1 1. (cancelled)

1 2. (currently amended) A hybrid device comprising:

2 a sensor having a permanent magnet adjacent to a

3 permeable pole piece and a sensor coil coupled to the pole

4 piece providing a sensor output, [The hybrid device according

5 to claim 1 wherein] the permeable pole piece is fabricated as

6 a cylinder, the permeable pole piece having a concentric axis;

7 a target for interacting with the sensor;

8 an excitation means for energizing the sensor coil; and

9 an output signal detector connected to the excitation

10 means.

1 3. (original) The hybrid device according to claim 2 wherein

2 the sensor coil is a spiral coil surrounding the permeable

3 pole piece along the concentric axis of the permeable pole

4 piece.

1 4. (currently amended) A hybrid device comprising:

2 a sensor having a permanent magnet adjacent to a

3 permeable pole piece and a sensor coil coupled to the pole

4 piece providing a sensor output;

5 a target for interacting with the sensor;

6 [The hybrid device according to claim 1 wherein the

7 excitation means is] an inductive bridge for energizing the

8 sensor coil; and

9 an output signal detector connected to the excitation

10 means.

1 5. (original) The hybrid device according to claim 4 further

2 comprising: a temperature compensation coil coupled across the

3 inductive bridge.

1 6. (currently amended) A hybrid device comprising:  
2 a sensor having a permanent magnet adjacent to a  
3 permeable pole piece and a sensor coil coupled to the pole  
4 piece providing a sensor output;  
5 a target for interacting with the sensor;  
6 [The hybrid device according to claim 1 wherein the  
7 excitation means is] a Colpitts Oscillator for energizing the  
8 sensor coil; and  
9 an output signal detector connected to the excitation  
10 means.

1 7. (currently amended) A hybrid device comprising:  
2 a sensor having a permanent magnet adjacent to a  
3 permeable pole piece and a sensor coil coupled to the pole  
4 piece providing a sensor output;  
5 a target for interacting with the sensor;  
6 an excitation means for energizing the sensor coil; and  
7 an output signal detector connected to the excitation  
8 means, [The hybrid device according to claim 1 wherein] the  
9 output signal detector correlates the sensor output to a  
10 target surface velocity.

1 8. (currently amended) A hybrid device comprising:  
2 a sensor having a permanent magnet adjacent to a  
3 permeable pole piece and a sensor coil coupled to the pole  
4 piece providing a sensor output;  
5 a target for interacting with the sensor;  
6 an excitation means for energizing the sensor coil; and  
7 an output signal detector connected to the excitation  
8 means, [The hybrid device according to claim 1 wherein] the  
9 output signal detector correlates a sensor output to  
10 proximity between the target and the sensor.

1 9. (currently amended) A hybrid device comprising:  
2 a sensor having a permanent magnet adjacent to a  
3 permeable pole piece and a sensor coil coupled to the pole  
4 piece providing a sensor output, [The hybrid device according  
5 to claim 1 wherein] the permeable pole piece is fabricated as  
6 a hollow cylinder having a concentric axis;  
7 a target for interacting with the sensor;  
8 an excitation means for energizing the sensor coil; and  
9 an output signal detector connected to the excitation  
10 means.

1 10. (original) The hybrid device according to claim 9 wherein  
2 the sensor coil is a spiral coil within the permeable pole  
3 piece, the spiral coil is wound along the concentric axis of  
4 the permeable pole piece.

1 11. (original) The hybrid device according to claim 9 wherein  
2 the permeable pole piece is fabricated as a caliper, the  
3 permeable pole piece having a concentric axis.

1 12. (original) A hybrid device comprising:  
2 a sensor having a permeable pole piece with a sensor coil  
3 coupled to the permeable pole piece;  
4 a target having at least one permanent magnet for  
5 interacting with the sensor;  
6 an excitation apparatus connected to the sensor coil; and  
7 an output signal detector connected to the excitation  
8 apparatus for determining sensor output.

1 13. (original) The hybrid device according to claim 12 wherein  
2 the permeable pole piece is fabricated as a cylinder, the  
3 permeable pole piece having a concentric axis.

1 14. (original) The hybrid device according to claim 12 wherein  
2 the sensor coil is a spiral coil surrounding the permeable  
3 pole piece along the concentric axis of the permeable pole  
4 piece.

1 15. (original) The hybrid device according to claim 12 wherein  
2 the excitation means is an inductive bridge.

1 16. (original) The hybrid device according to claim 14 further  
2 comprising:

3 a temperature compensation coil coupled across the  
4 inductive bridge.

1 17. (original) The hybrid device according to claim 12 wherein  
2 the excitation apparatus is a Colpitts Oscillator.

1 18. (original) The hybrid device according to claim 12 wherein  
2 the output signal detector correlates the sensor output to the  
3 velocity of the at least one permanent magnet.

1 19. (original) The hybrid device according to claim 12 wherein  
2 the output signal detector correlates a sensor output to  
3 proximity between the at least one permanent magnet and the  
4 sensor.

1 20. (original) The hybrid device according to claim 12 wherein  
2 the permeable pole piece is fabricated as a hollow cylinder  
3 having a concentric axis.

1 21. (original) The hybrid device according to claim 20 wherein  
2 the sensor coil is a spiral coil within the permeable pole  
3 piece, the spiral coil is wound along the concentric axis of  
4 the permeable pole piece.

1 22. (original) The hybrid device according to claim 12 wherein  
 2 the permeable pole piece is fabricated as a caliper, the  
 3 permeable pole piece having a concentric axis.

1 23. (original) The hybrid device comprising:

2 a sensor having a permanent magnet adjacent to a  
 3 permeable pole piece and a sensor coil coupled to the pole  
 4 piece, the permeable pole piece is fabricated as a cylinder,  
 5 the permeable pole piece having a concentric axis, the sensor  
 6 coil is a spiral coil surrounding the permeable pole piece  
 7 along the concentric axis of the permeable pole piece;

8 a target for interacting with the sensor;

9 an excitation apparatus connected to the sensor coil, the  
 10 excitation apparatus is an inductive bridge;

11 a temperature compensation coil is coupled across the  
 12 inductive bridge; and

13 an output signal detector connected to the excitation  
 14 apparatus for determining sensor output, the output signal  
 15 detector correlates the sensor output to a target surface  
 16 velocity measurement.